California

HIGH SCHOOL EXIT EXAMINATION

Sample Items
Spring 2001

MATHEMATICS

SAMPLE ITEMS

California High School Exit Examination — Spring 2001

Directions: Give only one answer to each question. If you change an answer, be sure that the previous mark is erased completely.

Notes:

(1) Figures that accompany problems are drawn as accurately as possible EXCEPT when it is stated that a figure is not drawn to scale. All figures lie in a plane unless otherwise noted.

(2) All numbers used are real numbers. All algebraic expressions represent real numbers unless otherwise stated.

1. $3.6 \times 10^2 =$

A 3.600

B 36

C 360

D 3,600

M00036

2. Which of the following numerical expressions results in a negative number?

A (–7) + (–3)

B (–3) + (7)

C (3) + (7)

D (3) + (–7) + (11)

M00116

3. The price of a calculator has decreased from $12.00 to $9.00. What is the percent of decrease?

A 3%

B 25%

C 33%

D 75%

M02868

4. Some students attend school 180 of the 365 days in a year. About what part of the year do they attend school?

A 18%

B 50%

C 75%

D 180%

M00047

GO ON ▶

5. $4^3 \times 4^2 =$

A 4^5

B 4^6

C 16^5

D 16^6

M02661

6. **A pair of jeans regularly sells for $24.00. They are on sale for 25% off. What is the sale price of the jeans?**

A $6.00

B $18.00

C $20.00

D $30.00

M02870

7. **The winning number in a contest was less than 50. It was a multiple of 3, 5, and 6. What was the number?**

A 14

B 15

C 30

D It cannot be determined.

M00393

8. **Heather flipped a coin five times, and each time it came up heads. If Heather flips the coin one more time, what is the theoretical probability that it will come up tails?**

A $\frac{1}{6}$

B $\frac{1}{2}$

C $\frac{3}{5}$

D $\frac{5}{6}$

M02171

9. **The chart below shows the mathematics test scores of three students.**

Mathematics Test Scores

	Test 1	Test 2	Test 3	Test 4
Parisa	7	8	10	6
Hector	6	7	9	10
Charles	8	10	10	9

What is Hector's mean score?

A 6

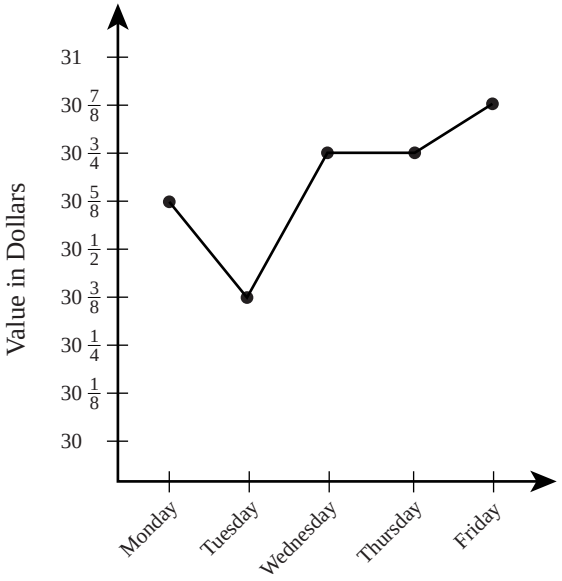
B 7

C 8

D 9

M00124

10. The graph below represents the closing price of a share of a certain stock for each day of a week.



Which day had the greatest increase in the value of this stock over that of the previous day?

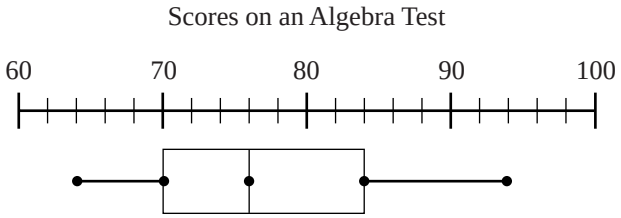
A Tuesday

B Wednesday

C Thursday

D Friday

M00295



11. According to the box-and-whisker plot, what was the median score on the algebra test?

A 70

B 76

C 84

D 92

M02053

12. Simplify the expression shown below.

$$(5x^2z^2)(8xz^3)$$

A $40x^2z^6$

B $40x^3z^5$

C $40x^3z^6$

D $40x^5z^5$

M02009

13. Solve for *n*.

$$2n + 3 < 17$$

A $n < 2$

B $n < 3$

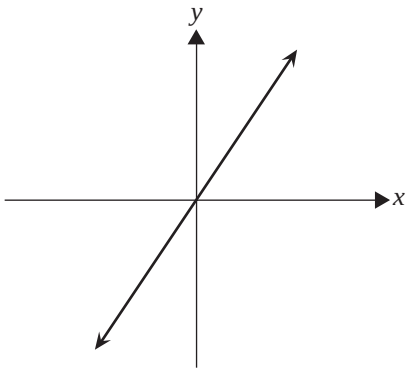
C $n < 5$

D $n < 7$

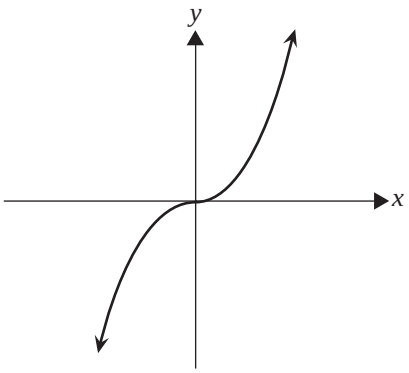
M02040

14. Which of the following could be the graph of $y = x^3$?

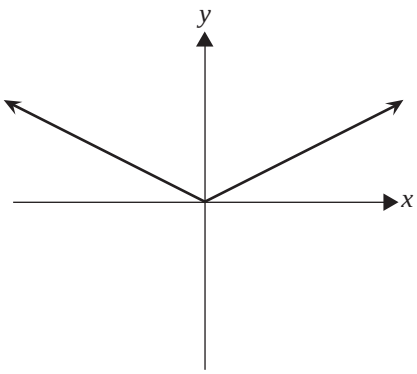
A



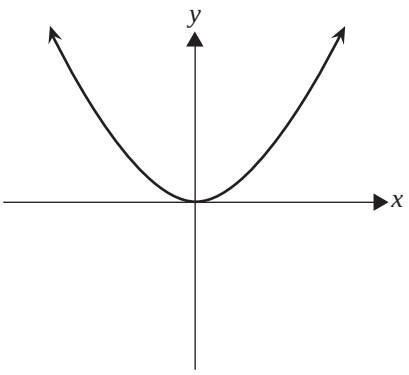
C



B



D



M02200

15. Divide a number by 5 and add 4 to the result. The answer is 9.

Which of the following equations matches these statements?

A $4 = 9 + \frac{n}{5}$

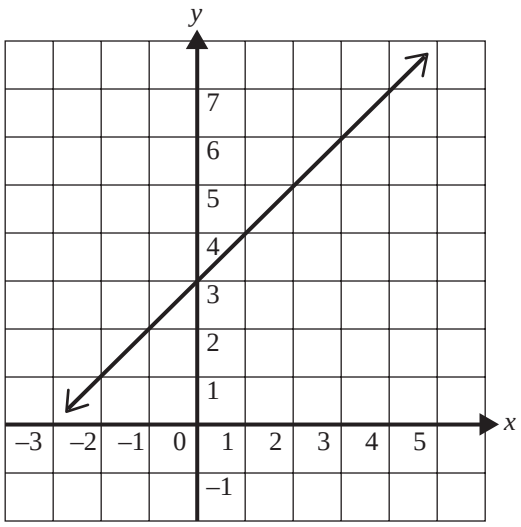
B $\frac{n}{5} + 4 = 9$

C $\frac{5}{n} = 4$

D $\frac{n+4}{5} = 9$

M00050

16. What is the equation of the graph shown below?



A $y = x - 1$

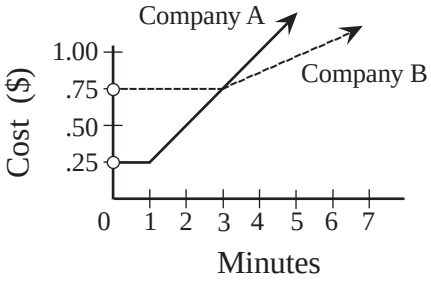
B $y = x + 1$

C $y = x + 3$

D $y = x - 3$

M02035

17. The cost of a long distance call charged by each of two telephone companies is shown on the graph below.



Company A is less expensive than Company B for

A all calls.

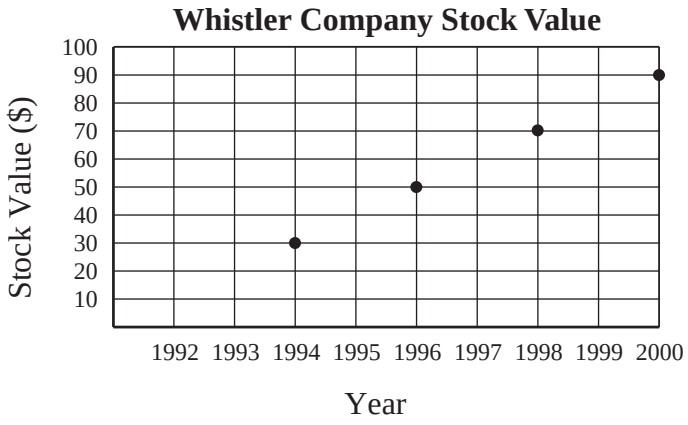
B 3 minute calls only.

C calls less than 3 minutes.

D calls longer than 3 minutes.

M02840

18. The graph below shows the value of Whistler Company stock at the end of every other year from 1994 to 2000.



From this graph, which of the following was the most <u>probable</u> value of Whistler Company stock at the end of 1992?

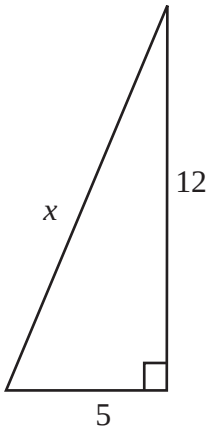
A –$10

B $1

C $10

D $20

M02898



19. What is the value of *x* in the triangle shown above?

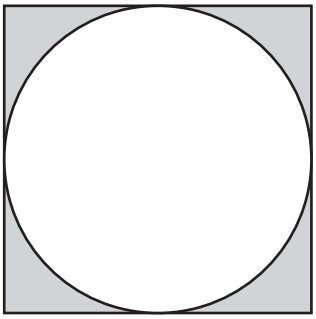
A 11

B 13

C 17

D 169

M02446



10 feet

20. The largest possible circle is to be cut from a 10-foot square board. What will be the approximate area, in square feet, of the remaining board (shaded region)? ($A = \pi r^2$ and $\pi \approx 3.14$)

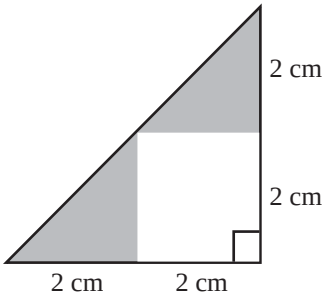
A 20

B 30

C 50

D 80

21. What is the area of the shaded region in the figure shown below? (Area of a triangle = $\frac{1}{2}bh$)



A 4 cm^2

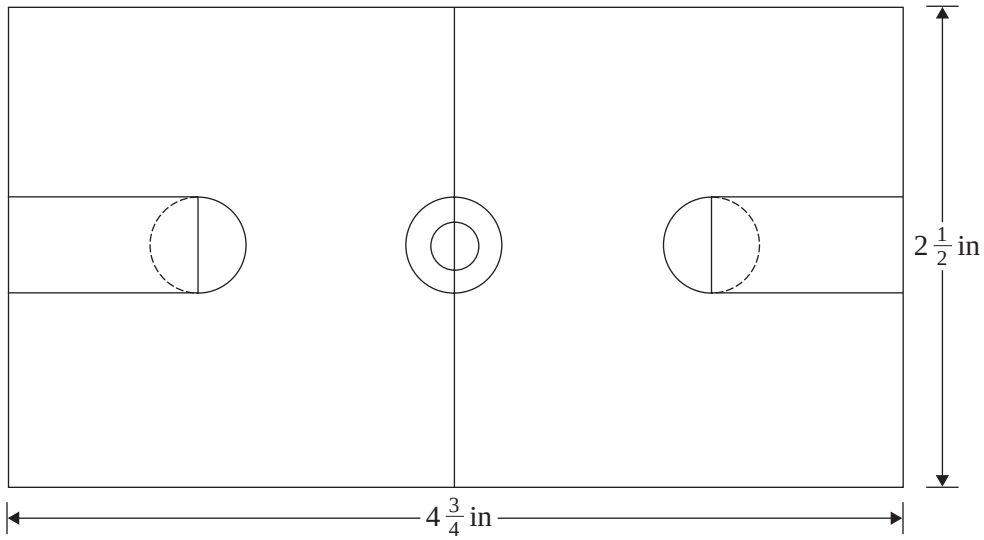
B 6 cm^2

C 8 cm^2

D 16 cm^2

M02814

22. The scale drawing of the basketball court shown below is drawn using a scale of 1 inch (in) = 24 feet (ft).



What is the length, in feet, of the basketball court?

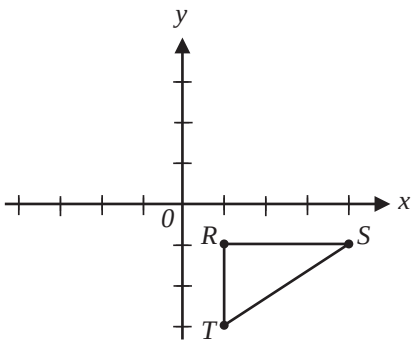
A 90 ft

B 104 ft

C 114 ft

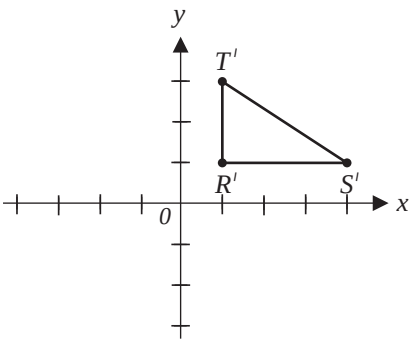
D 120 ft

M02233

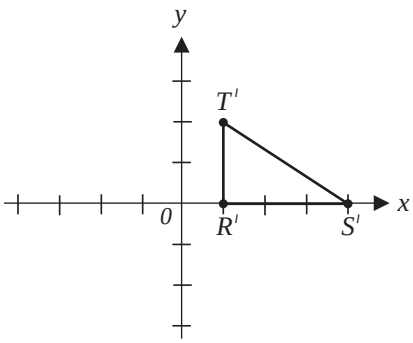


23. Which of the following triangles $R'S'T'$ is the image of triangle RST that results from reflecting triangle RST across the y-axis?

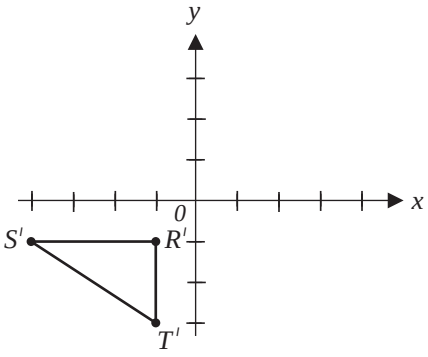
A



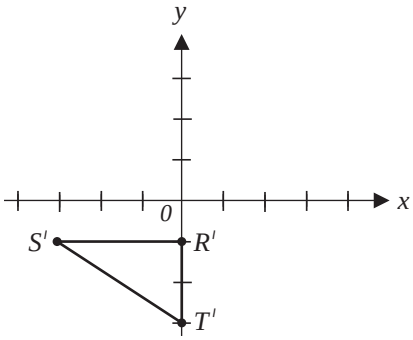
C



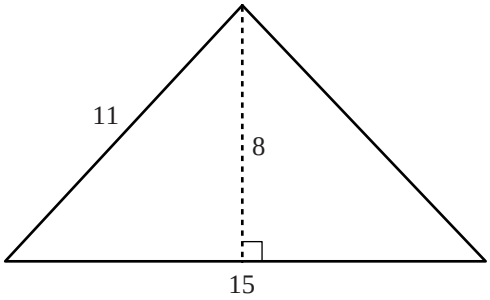
B



D



M02861



24. What is the area of the triangle shown above?

(A = $\frac{1}{2}bh$)

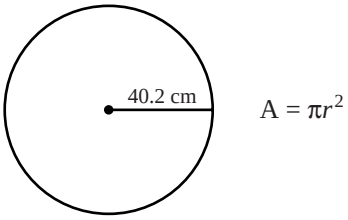
A 44 square units

B 60 square units

C 88 square units

D 120 square units

M00101



25. For the circle above, Louis calculated the area and got an answer of 50.769. He knew his answer was wrong because the correct answer should be about

A $4 \times 4 \times 4 = 64$

B $3 \times 3 \times 40 = 360$

C $31 \times 4 \times 4 = 496$

D $3 \times 40 \times 40 = 4800$

M00338

26. What is the *y*-intercept of the line $2x - 3y = 12$?

A (0, –4)

B (0, –3)

C (2, 0)

D (6, 0)

M02591

27. Which of the following statements describes parallel lines?

A Same *y*-intercept but different slopes

B Same slope but different *y*-intercepts

C Opposite slopes but same *x*-intercepts

D Opposite *x*-intercepts but same *y*-intercept

M02610

28. Assume *y* is an integer and solve for *y*.

$$|y + 2| = 9$$

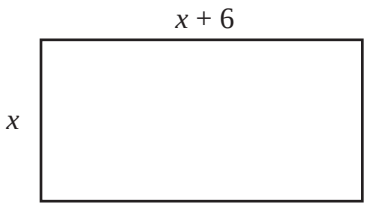
A {–11, 7}

B {–7, 7}

C {–7, 11}

D {–11, 11}

M02242



29. The length of the rectangle above is 6 units longer than the width. Which expression could be used to represent the area of the rectangle?

A $x^2 + 6x$

B $x^2 - 36$

C $x^2 + 6x + 6$

D $x^2 + 12x + 36$

M00402

$$\frac{20}{x} = \frac{4}{x-5}$$

30. Which of the following is equivalent to the equation shown above?

A $x(x - 5) = 80$

B $20(x - 5) = 4x$

C $20x = 4(x - 5)$

D $24 = x + (x - 5)$

M02403

MATHEMATICS
SAMPLE ITEMS

ITEM MAP

Item No.	KEY	Strand
1	C	Grade 7 - Number Sense
2	A	Grade 7 - Number Sense
3	B	Grade 7 - Number Sense
4	B	Grade 7 - Number Sense
5	A	Grade 7 - Number Sense
6	B	Grade 7 - Number Sense
7	C	Grade 7 - Math Reasoning (Number Sense)
8	B	Grade 6 - Statistics, Data Analysis, and Probability
9	C	Grade 6 - Statistics, Data Analysis, and Probability
10	B	Grade 7 - Statistics, Data Analysis, and Probability
11	B	Grade 7 - Statistics, Data Analysis, and Probability
12	B	Grade 7 - Algebra Functions
13	D	Grade 7 - Algebra Functions
14	C	Grade 7 - Algebra Functions
15	B	Grade 7 - Algebra Functions
16	C	Grade 7 - Algebra Functions
17	C	Grade 7 - Algebra Functions
18	C	Grade 7 - Math Reasoning (Algebra Functions)
19	B	Grade 7 - Measurement and Geometry
20	A	Grade 7 - Measurement and Geometry
21	A	Grade 7 - Measurement and Geometry
22	C	Grade 7 - Measurement and Geometry
23	B	Grade 7 - Measurement and Geometry
24	B	Grade 7 - Measurement and Geometry
25	D	Grade 7 - Math Reasoning (Measurement and Geometry)
26	A	Algebra 1
27	B	Algebra 1
28	A	Algebra 1
29	A	Algebra 1
30	B	Algebra 1